

REDUCED COMPLEXITY MULTICARRIER PRECODER

Abstract of the Disclosure

A reduced complexity precoder provides an efficient method and structure to precode a vector-signal-point sequence for transmission through a band-limited channel. The precoder enables a block-oriented receiver to recover an underlying data stream in the presence of inter-symbol interference and noise. The precoder structure is applicable to multicarrier systems such as DMT (discrete multitone) or related transform domain and vector communication systems. The inventive precoder reduces the cost of precoding by an order of magnitude and eliminates the need for a cyclic prefix in DMT and related communication systems. Related multicarrier transmitter and receiver structures and methods which reduce computation, increase transmission bandwidth and reduce transmission power are also developed.

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